

### ***Listing of the Claims***

This listing of claims will replace all prior versions, and listings of claims in the application.

1. (Currently amended) A serum free cell culture medium comprising at least one transition metal binding compound or at least one transition element complex, said complex comprising at least one transition element or a salt or ion thereof complexed to at least one transition metal-binding compound, wherein said medium is capable of supporting the cultivation of a cell *in vitro*, wherein said transition metal binding compound is selected from the group consisting of a polyol, 2-hydroxypyridine-N-oxide, 1,3,5-N,N',N''-tris(2,3-dihydroxybenzoyl)aminomethylbenzene, ethylenediamine-N,N'-tetramethylenephosphonic acid, trisuccin, an acidic saccharide, a glycosaminoglycan, diethylenetriaminepentaacetic acid, nitrilotriacetic acid, mono-substituted 2,2'-bipyridine, bis-substituted 2,2'-bipyridine, tris-substituted 2,2'-bipyridine, a hydroxamate derivative, an amino acid derivative, deferoxamine, ferrioxamine, iron basic porphine, porphyrin and derivatives thereof, DOTA-lysine, a texaphyrin, a sapphyrin, a polyaminocarboxylic acid, an  $\alpha$ -hydroxycarboxylic acid, a polyethylenecarbamate, picolinic acid, 4-pyridoxic acid, 3-hydroxy-2-pyridinemaltol, maltol, ethyl maltol, Ustilago ferrichrome, nicotinic acid-N-oxide, 2-hydroxy-nicotinic acid and IRC011.

2. (Previously presented) The medium of claim 1, wherein said transition element is selected from the group consisting of scandium, titanium, vanadium, chromium, manganese, iron, cobalt, nickel, copper, zinc, yttrium, zirconium, niobium, molybdenum,

technetium, rubidium, rhodium, palladium, silver, cadmium, lanthanum, hafnium, tantalum, tungsten, rhenium, osmium, iridium, platinum, gold, mercury, actinium, and salts thereof.

3. (Original) The medium of claim 1, wherein said transition element is iron, or a salt or ion of iron.

4. (Cancelled)

5. (Original) The medium of claim 1, wherein said metal-binding compound is a polyol.

6. (Original) The medium of claim 5, wherein said polyol is sorbitol or fructose.

7. (Original) The medium of claim 5, wherein said polyol is sorbitol.

8. (Currently amended) A serum free cell culture medium comprising at least one transition metal binding compound or at least one transition element complex, said complex comprising at least one transition element or a salt or ion thereof complexed to at least one transition metal-binding compound, wherein said medium is capable of supporting the cultivation of a cell *in vitro*, wherein said transition metal-binding compound is a hydroxypyridine derivative selected from the group consisting of 2-hydroxypyridine-N-oxide, 3-hydroxy-4-pyrone, 3-hydroxypyrid-2-one, 3-hydroxypyrid-2-one, ~~3-hydroxypyrid-4-one~~;

1-hydroxypyrid-2-one, ~~1,2-dimethyl-3-hydroxypyrid-4-one~~, 1-methyl-3-hydroxypyrid-2-one, ~~3-hydroxy-2(1H)-pyridinone~~, ~~nicotinic acid-N-oxide~~, and 2-hydroxy-nicotinic acid.

9. (Cancelled)

10. (Original) The medium of claim 8, wherein said hydroxypyridine derivative is 2-hydroxypyridine-N-oxide.

11. (Original) The medium of claim 3, wherein said transition element ion is a ferrous ion or a ferric ion.

12. (Original) The medium of claim 3, wherein said salt of said transition element salt is  $\text{FeCl}_3$ .

13. (Original) The medium of claim 1, wherein said transition element complex is sorbitol- $\text{FeCl}_3$ .

14. (Cancelled)

15. (Previously presented) The cell culture medium of claim 1, said medium further comprising one or more ingredients selected from the group of ingredients consisting of at least one amino acid, at least one vitamin, at least one inorganic salt, at least one organic salt, at least one trace metal, at least one nucleotide, at least one buffering salt, at least one

sugar, at least one lipid and at least one hormone.

16. (Original) The cell culture medium of claim 1, wherein said cell culture medium supports the growth or cultivation of at least one cell selected from a group consisting of eukaryotic cells and prokaryotic cells.

17. (Original) The cell culture medium of claim 16, wherein said eukaryotic cells are selected from a group consisting of fish cells, plant cells, animal cells, insect cells and avian cells.

18. (Original) The cell culture medium of claim 17, wherein said cells are selected from a group consisting of 293 cells, PER-C6 cells, CHO cells, COS cells and Sp2/0 cells.

19. (Cancelled)

20. (Original) The cell culture medium of claim 1, wherein said medium is a defined medium.

21. (Previously presented) The medium of claim 20, wherein said transition element is iron, or a salt or ion thereof.

22. (Previously presented) The medium of claim 1, wherein said medium does not contain transferrin.

23. (Original) The medium of claim 1, wherein said medium does not contain animal derived metal carriers.

24. (Currently amended) A serum-free cell culture medium obtained by combining a cell culture medium with at least one transition metal binding compound or at least one transition element complex, said complex comprising at least one transition element or a salt or ion thereof complexed to at least one transition metal-binding compound, wherein said medium is capable of supporting the cultivation of a cell *in vitro*, wherein said transition metal binding compound is selected from the group consisting of a polyol, 2-hydroxypyridine-N-oxide, 1,3,5-N,N',N''-tris(2,3-dihydroxybenzoyl)aminomethylbenzene, ethylenediamine-N,N'-tetramethylenephosphonic acid, trisuccin, an acidic saccharide, a glycosaminoglycan, diethylenetriaminepentaacetic acid, nitrilotriacetic acid, mono-substituted 2,2'-bipyridine, bis-substituted 2,2'-bipyridine, tris-substituted 2,2'-bipyridine, a hydroxamate derivative, an amino acid derivative, deferoxamine, ferrioxamine, iron basic porphine, porphyrin and derivatives thereof, DOTA-lysine, a texaphyrin, a sapphyrin, a polyaminocarboxylic acid, an  $\alpha$ -hydroxycarboxylic acid, a polyethylenecarbamate, picolinic acid, 4-pyridoxic acid, ~~3-hydroxy-2-pyridineethyl maltol~~, maltol, ethyl maltol, Ustilago ferrichrome, nicotinic acid-N-oxide, 2-hydroxy-nicotinic acid and IRC011.

25. (Previously presented) The medium obtained according to claim 24, wherein said transition element is selected from the group consisting of scandium, titanium, vanadium, chromium, manganese, iron, cobalt, nickel, copper, zinc, yttrium, zirconium,

niobium, molybdenum, technetium, rubidium, rhodium, palladium, silver, cadmium, lanthanum, hafnium, tantalum, tungsten, rhenium, osmium, iridium, platinum, gold, mercury, actinium, and salts thereof.

26. (Original) The medium obtained according to claim 24, wherein said transition element is iron, or a salt or ion thereof.

27. (Cancelled)

28. (Original) The medium obtained according to claim 24, wherein said metal-binding compound is a polyol.

29. (Original) The medium obtained according to claim 28, wherein said polyol is sorbitol, dextran, or fructose.

30. (Original) The medium obtained according to claim 29, wherein said polyol is sorbitol.

31. (Currently amended) A serum-free cell culture medium obtained by combining a cell culture medium with at least one transition metal binding compound or at least one transition element complex, said complex comprising at least one transition element or a salt or ion thereof complexed to at least one transition metal-binding compound, wherein said medium is capable of supporting the cultivation of a cell *in vitro*, wherein said metal-

binding compound is a hydroxypyridine derivative selected from the group consisting of 2-hydroxypyridine-N-oxide, 3-hydroxy-4-pyrone, 3-hydroxypyrid-2-one, ~~3-hydroxypyrid-4-one~~, 1-hydroxypyrid-2-one, ~~1,2-dimethyl-3-hydroxypyrid-4-one~~, 1-methyl-3-hydroxypyrid-2-one, ~~3-hydroxy-2(1H)-pyridinone~~, ~~nicotinic acid-N-oxide~~, and 2-hydroxy-nicotinic acid.

32. (Cancelled)

33. (Previously presented) The medium obtained according to claim 31, wherein said hydroxypyridine derivative is 2-hydroxypyridine-N-oxide.

34. (Original) The medium obtained according to claim 24, wherein said transition element ion is a ferrous ion or a ferric ion.

35. (Original) The medium obtained according to claim 34, wherein said salt of said transition element salt is  $\text{FeCl}_3$ .

36. (Original) The medium obtained according to claim 24, wherein said transition element complex is sorbitol- $\text{FeCl}_3$ .

37 - 43. (Cancelled)

44. (Previously presented) A kit for the cultivation of a cell *in vitro*, said kit comprising:

- (a) at least one first container containing at least one first component selected from the group consisting of one or more cell culture media or media ingredients, and one or more cells, and
- (b) at least one second container containing at least one second component selected from the group consisting of one or more transition metal binding compounds and at least one transition element complex, said complex comprising at least one transition element or a salt or ion thereof complexed to at least one transition metal-binding compound.

45. (Previously presented) The kit of claim 44, wherein said transition element is selected from the group consisting of scandium, titanium, vanadium, chromium, manganese, iron, cobalt, nickel, copper, zinc, yttrium, zirconium, niobium, molybdenum, technetium, rubidium, rhodium, palladium, silver, cadmium, lanthanum, hafnium, tantalum, tungsten, rhenium, osmium, iridium, platinum, gold, mercury, actinium, and salts thereof.

46. (Original) The kit of claim 44, wherein said transition element is iron, or a salt or ion thereof.

47. (Currently amended) The kit of claim 44, wherein said metal-binding compound is selected from the group consisting of a polyol, a hydroxypyridine derivative, 1,3,5-N,N',N''-tris(2,3-dihydroxybenzoyl)aminomethylbenzene, ethylenediamine-N,N'-tetramethylenephosphonic acid, nitrilotriacetic acid, trisuccin, an acidic saccharide, a glycosaminoglycan, diethylenetriaminepentaacetic acid, mono-substituted 2,2'-bipyridine,



bis-substituted 2,2'-bipyridine, tris-substituted 2,2'-bipyridine, a hydroxamate derivative, an amino acid derivative, deferoxamine, ferrioxamine, iron basic porphine, porphyrin and derivatives thereof, DOTA-lysine, a texaphyrin, a sapphyrin, a polyaminocarboxylic acid, an  $\alpha$ -hydroxycarboxylic acid, a polyethylenecarbamate, picolinic acid, 4-pyridoxic acid, 3-hydroxy-2-pyridineethyl maltol, maltol, ethyl maltol, Ustilago ferrichrome, nicotinic acid-N-oxide, 2-hydroxy-nicotinic acid and IRC011.

48. (Original) A composition comprising the culture medium of claim 1 and at least one cell.

49. (Original) The composition of claim 48, wherein said cell is selected from the group consisting of a plant cell, a mammalian cell, a bird cell, an insect cell, or a fish cell.

50. (Original) The composition of claim 49, wherein said mammalian cell is a human cell.

51. (Original) The composition of claim 48, wherein said cell is a normal cell.

52. (Original) The composition of claim 48, wherein said cell is an abnormal cell.

53. (Original) The composition of claim 52, wherein said abnormal cell is a transformed cell, an established cell, or a cell derived from a diseased tissue sample.

54. (Original) The medium of claim 1, wherein said medium is a 1X medium formulation.

55. (Original) The medium of claim 1, wherein said medium is a concentrated medium formulation.

56. (Original) The medium of claim 1, wherein said transition metal binding compound is ferrous gluconate.

57. (Original) The medium of claim 1, wherein said transition metal binding compound is acetohydroxamic acid.

58. (Original) The medium obtained according to claim 24, wherein said transition metal binding compound is ferrous gluconate.

59. (Original) The medium obtained according to claim 24, wherein said transition metal binding compound is acetohydroxamic acid.

60 - 61. (Cancelled)